

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Abe

Serial No.: 10/644,949

Filed: 08/19/2003

For: SYSTEM, METHOD AND COMPUTER)  
PROGRAM PRODUCT FOR THE )  
OPTIMIZATION OF PRICE TO )  
SATISFY CERTAIN BUSINESS )  
OBJECTIVES )

Examiner: Unknown

Group Art Unit: Unknown

Docket No. ABE1P001

Date: December 3, 2003

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on December 3, 2003.

Signed: \_\_\_\_\_

Erica Farlow

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

PETITION TO MAKE SPECIAL  
37 C.F.R. 1.102 and MPEP § 708.02(VIII)

Sir:

**1. Petition -- MPEP § 708.02(VIII)(A):**

Applicant hereby petitions to make this new application special. This application has not received any examination by the Examiner.

**2. Fee**

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130.00 OP

A check for the petition amount has been included. The Office is authorized to charge any additional fees for this petition to Deposit Account No. 50-1351 (Order No. ABE1P001).

**3. Claims -- MPEP § 708.02(VIII)(B)**

All of the claims in this case are directed to a single invention. If the Office determines that all of the claims presented are not directed to a single invention, then applicant will make an election without traverse as a prerequisite to the grant of special status.

**4. Searches and Declaration – MPEP § 708.02(VIII)(C)**

As the undersigned practitioner, being duly registered to practice before the U.S. Patent and Trademark Office, I declare that a careful and thorough pre-examination search of the prior art has been made.

The classes and subclasses searched include:

705 and all subclasses; and  
All classes and subclasses.

The terms used in defining the search include:

“best,” “optimal,” “optimized,” “optimize,” “price,” “demand planning,” “elasticity curve,” “supply,” and “demand.”

The resulting potential references were reviewed for their degree of relevancy to the present invention.

**5. Discussion of Related References --MPEP § 708.02(VIII)(D) and (E)**

There is submitted herewith a copy of each of the references deemed most closely related to the subject matter of the claimed invention. Also attached is form PTO-1449.

(1) U.S. Patent Number 5,615,109 by Eder, issued March 25, 1997

This patent is titled "Method of and system for generating feasible, profit maximizing requisition sets" and it teaches:

*In a computer based inventory control method and system, feasible profit maximizing sets of requisitions are created. System processing starts with the creation of detailed, multi-dimensional forecasts of sales and cash receipts using stored algorithms and data preferentially extracted from a basic financial system and the adjustment of the forecasts to match the controlling forecast specified by the user. The adjustment of the forecasts is facilitated by the use of a calculated variable that defines the magnitude of the relative adjustment for each forecast element. All forecasts are adjusted to exactly match a controlling forecast which is either a multivalent combination of the previously generated forecasts or the user specified controlling forecast. The adjusted forecast of sales by item is then used in calculating a requisition set that satisfies expected demand while meeting user specified service level targets. A profit maximized requisition set is then created that utilizes vendor and unit of measure substitution under a variety of discount schedules to the extent possible within the user specified constraints. The processing completed by the system to determine the profit maximizing requisition set utilizes multi-objective, mixed-integer, linear programming techniques. A financial forecast is then calculated and displayed to determine if purchasing the profit maximizing requisition set will be feasible under the forecast financial conditions. Once the constraints and/or forecasts are adjusted as required to produce a feasible solution, processing advances to the profit enhancement stage where overall financial constraints are established and user specified constraints on commitment percentages, global unit of measure substitution and global vendor substitution are optionally relaxed and profit enhancing changes are calculated, stored and displayed. The user optionally accepts displayed enhancements and the financial forecast is recalculated to demonstrate the*

*impact of the accepted changes before the requisitions are modified to reflect the accepted enhancements.*

The reference is thus oriented toward inventory optimization to achieve profit, not optimization of price to further enterprise objectives. The reference fails to discuss a method of “determining an optimal price,” as claimed, to achieve the specific objectives of revenue, market share, or factory utilization; as claimed by applicant. In addition, the reference uses historical data from a financial system to create a forecast, which is significantly different and less accurate than the following claimed approach: “receiving a plurality of prices associated with a price-frequency mathematical distribution, utilizing an input device; receiving a number of competitors, utilizing the input device; receiving a business objective, utilizing the input device; receiving a cost associated with a good or service, utilizing the input device; calculating an optimal price, utilizing a processor coupled to the input device; and outputting the optimal price, utilizing an output device coupled to the processor.”

(2) U.S. Patent Number 5,459,656 by Fields, issued October 17, 1995

This patent is titled “Business demand projection system and method” and it teaches:

*A business demand based control system and method stores past business demand data during past time intervals for use with other data to compute business demands in such manner that the past business demand data is used to project the business demands in current and near-future time intervals. The system measures and stores the business demand data for a plurality of time intervals and a plurality of products or tasks, and projects the business demand for a plurality of products or tasks for near-future time intervals using percentage based demand curves. The system allows the creation of a number of demand curves for the items to determine near future demand, using defined functions and variables. Business demand projections for current and near-future time intervals are revised for a plurality of business items in response to variances in actual business demand data in time intervals just prior to the current time interval.*

The reference thus fails to disclose, teach, or suggest the claimed system, method and computer program product for the optimization of price to satisfy certain “business objective[s]”, as claimed by applicant. The reference further does not make mention, or draw any relationship to the “number of competitors” (as claimed) to the determination of demand, or make any mention of the probability a customer will purchase the product at a given price. Furthermore, the reference does not discuss “distribution” of “prices” (as claimed) from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(3) U.S. Patent Number 6,553,352 by Delurgio, issued April 22, 2003

This patent is titled “Interface for merchandise price optimization” and it teaches:

*An apparatus and method are provided for an interface enabling a user to determine optimum prices of products for sale. The interface includes a scenario/results processor that enables the user to prescribe an optimization scenario, and that presents the optimum prices to the user. The optimum prices are determined by execution of the optimization scenario, where the optimum prices are determined based upon estimated product demand and calculated activity based costs. The scenario/results processor has an input/output processor and a scenario controller. The input/output processor acquires data corresponding to the optimization scenario from the user, and distributes optimization results to the user. The scenario controller is coupled to the input/output processor. The scenario controller controls acquisition of the data and the distribution of the optimization results in accordance with a price optimization procedure.*

The reference fails to disclose, teach, or suggest a specific method for determining the demand for a product at various prices. Specifically, with respect to the claims, the reference does not make mention, or draw any relationship to the “number of competitors” (as claimed) to the determination of demand, or make any mention of the “probability” (see claim 17) a customer will purchase the product at a given price. Furthermore, the reference does not discuss

“distribution” of “prices” (as claimed) from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(4) U.S. Patent Number 6,094,641 by Ouimet, issued July 25, 2000

This patent is titled “Method for incorporating psychological effects into demand models” and it teaches:

*A method for incorporating psychological effects into a demand model for pricing. First the original demand model is modified to include a mechanism to convert actual prices into perceived prices, thus causing the demand model to predict higher demand for certain prices. The user specifies the function that converts from real prices to perceived prices. This modified demand function is then fitted to a sales history to yield the parameters appropriate to its particular form. Also, the demand model can be modified to account for promotional effects. The user defines a visibility model, which gives the relative increase in demand for an item caused by a promotion, and the cost of the promotion. The demand model is modified to include the effect of increased demand based on the visibility, and a profit model is modified to account for the added cost due to the added visibility. The profit model is then optimized with respect to both prices and promotions.*

The reference fails to disclose, teach, or suggest the more accurate method for determining the demand for a product at various prices. Specifically, the reference does not make mention, or draw any relationship to “the number of competitors,” (as claimed) or make any mention of the probability a customer will purchase the product at a given price. See Claim 17. Furthermore, the reference does not discuss “distribution” of “prices” (as claimed) from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(5) U.S. Patent Number 6,078,893 by Ouimet, issued June 20, 2000

This patent is titled “Method for stabilized tuning of demand models” and it teaches:

*A method for tuning a demand model in manner that is stable with respect to fluctuations in the sales history used for the tuning is provided. A market model is selected, which predicts how a subset of the parameters in the demand model depends upon information external to the sales history; this model may itself have a number of parameters. An effective figure-of-merit function is defined, consisting of a standard figure-of-merit function based upon the demand model and the sales history, plus a function that attains a minimum value when the parameters of the demand model are closest to the predictions of the market model. This effective figure-of-merit function is minimized with respect to the demand model and market model parameters. The resulting demand model parameters conform to the portions of the sales history data that show a strong trend, and conform to the external market information when the corresponding portions of the sales history data show noise.*

The reference fails to disclose, teach, or suggest the more accurate method for determining the demand for a product at various prices. The reference does not make mention, or draw any relationship to the “number of competitors,” (as claimed) or make any mention of the probability a customer will purchase the product at a given price. Again, see Claim 17. Furthermore, the reference does not discuss distribution of prices from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(6) U.S. Patent Number 5,377,095 by Maeda, issued December 27, 1994

This patent is titled “Merchandise analysis system with sales data table and various functions for predicting the sale by item” and it teaches:

*A merchandise analysis system for predicting the sale of a registered item, including: a sales data table having sales data of a plurality of items; an input terminal for registering an item and for setting an analysis term; a retrieval unit connected to the table and the input terminal to search the sales data table for the sales data corresponding to the registered item and the analysis term; a function*

*table having various functions fitted to respective data of sale versus price; a dispersion measure table for storing errors obtained with respect to the respective data of sale versus price retrieved on the basis of the respective functions; an analysis device connected to the dispersion measure table so as to determine one function giving the minimum one of the errors and the values of parameters therefore; and a display connected to the dispersion measure table so as to display the sales data of the registered item corresponding to the analysis term in a graph expressing the determined one function into which the determined parameters are substituted, the display being arranged to display the predicted sale corresponding to the registered price inputted through the input terminal in accordance with the display of the sales data.*

The reference fails to disclose, teach, or suggest the more accurate method for determining the demand for a product at various prices. The reference does not make mention, or draw any relationship to the “number of competitors,” (see independent claims) or make any mention of the probability a customer will purchase the product at a given price (see Claim 17). Furthermore, the reference does not discuss distribution of prices from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(7) U.S. Patent Number 5,822,736 by Hartman, issued October 13, 1998

The title of this patent is “Variable margin pricing system” and it teaches:

*A variable margin pricing system and method that generates retail prices based on customer price sensitivity. Products are grouped into pools from a first pool for most price sensitive products to a last pool for least price sensitive products. A logical relationship between margins and the customer price sensitivity is determined for the products. Based on this logical relationship and each product's pool assignment, the system and method calculate each product's margin and corresponding retail price. The method is also used to generate retail price labels having retail prices based on customer price sensitivity for the products to which the labels are to be affixed or located proximate.*



The reference fails to disclose, teach, or suggest the significantly more accurate method referenced in the pending patent for determining the demand of a product based on the “price-frequency mathematical distribution” of prices (as independently claimed) depicting the market of competing products. The reference makes no mention of “the number of competitors” (see independent claims) or the probability a customer will purchase the product at a given price. Rather, the methodology suggested in the reference for determining the demand of a product relies solely on product sales data.

(8) U.S. Patent Number 5,878,400 by Carter, III, issued March 2, 1999

This patent is titled “Method and apparatus for pricing products in multi-level product and organizational groups” and teaches:

*The invention organizes various pricing tables and price adjustment tables and various products and purchasing organizations based on "who" (i.e. which purchasing organization) is purchasing "what" (i.e. which product). The invention utilizes a denormalized table to relate the "who" to the "what" using denormalized numbers. The invention further organizes various purchasing organizations and products into hierarchical tables. These hierarchical tables are called organizational groups and product groups. Various price adjustments may be specified for each level of the organizational groups and product groups hierarchies. The price adjustments for a particular purchasing organization are determined by retrieving the price adjustments for that particular purchasing organization as well as the price adjustments for organizational groups above the particular purchasing organization in the organizational groups hierarchy. Likewise, the price adjustments for a particular product are determined by retrieving the price adjustments for that particular product as well as the price adjustments for product groups above the particular product in the product groups hierarchy. The invention sorts the various pricing adjustments applicable to a particular product offered to a particular purchasing group based on several criteria. After the sorting is accomplished the pricing adjustments are applied in sequence to arrive at a final price at which a particular product can be sold to a particular purchasing organization.*

The reference fails to disclose, teach, or suggest a method for optimizing price for the specific enterprise objectives of revenue, gross profit, earnings before interest and taxes, market penetration, or factory utilization. See Claim 18. The reference makes no attempt to determine the demand for a product at various prices. Most importantly, with respect to the independent claims, the reference does not make mention, or draw any relationship to the “number of competitors,” or make any mention of the probability a customer will purchase the product at a given price. See Furthermore, the reference does not discuss distribution of prices from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(9) U.S. Patent Number 5,918,209 by Campbell, issued June 29, 1999

This patent is titled “Method and system for determining marginal values for use in a revenue management system” and teaches:

*A method and system for determining marginal values for perishable resources expiring at a future time, for example, an airline seat, hotel room night, rental car day or the like, for use in a perishable resource revenue management system. Data for the perishable resources and composite resources is loaded from the perishable resource revenue management system into the marginal value system. Internal data structures are constructed for linking each of the perishable resources to their associated composite resources and for linking each of the composite resources to their associated perishable resources. The marginal values for the perishable resources are determined using a continuous optimization function using interdependencies among the perishable resources and the composite resources in the internal data structures. The marginal values are stored from the marginal value system into the perishable resource revenue management system.*

The reference fails to disclose, teach, or suggest the significantly more accurate method referenced in the pending patent for determining the demand of a product based on the “price-frequency mathematical distribution” of prices (as independently claimed) depicting the market of competing products. Still yet, the reference makes no mention of “the number of competitors” (see independent claims) or the

probability a customer will purchase the product at a given price (note Claim 17). Rather, the methodology suggested in the reference for determining the demand of a product relies solely on product sales data.

(10) U.S. Patent Number 5,987,425 by Hartman, issued November 16, 1999

This patent is titled “Variable margin pricing system” and teaches:

*A variable margin pricing system and method that generates retail prices based on customer price sensitivity. Products are grouped into pools from a first pool for most price sensitive products to a last pool for least price sensitive products. A logical relationship between margins and the customer price sensitivity is determined for the products. Based on this logical relationship and each product's pool assignment, the system and method calculate each product's margin and corresponding retail price. The method is also used to generate retail price labels having retail prices based on customer price sensitivity for the products to which the labels are to be affixed or located proximate.*

The reference fails to disclose, teach, or detail a specific method for determining the demand for a product at various prices. The reference does not make mention, or draw any relationship to “the number of competitors” (see all independent claims), or make any mention of the probability a customer will purchase the product at a given price. Furthermore, the reference does not discuss distribution of prices from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

(11) U.S. Patent Number 6,029,139 by Cunningham, issued February 22, 2000

This patent is titled “Method and apparatus for optimizing promotional sale of products based upon historical data” and teaches:

*A system for optimizing the promotional sale of a product, a product segment, or a category which may take into account related products or competing products comprising means for generating a three-dimensional data structure corresponding to the sales history for a product, the data structure dimensions corresponding to an event type domain, a time domain, and a unit of measurement domain, means for*

*populating the three-dimensional data structure, a neural network, means for training the neural network and means for applying sales objectives and constraints to the neural network.*

The reference fails to disclose, teach, or suggest the significantly more accurate method referenced in the pending patent for determining the demand of a product based on the “price-frequency mathematical distribution” of prices (as independently claimed) depicting the market of competing products. The reference makes no mention of the “number of competitors” or the probability a customer will purchase the product at a given price. Rather, the methodology suggested in the reference for determining the demand of a product relies solely on product sales data.

(12) U.S. Patent Number 6,308,162 by Ouimet, issued October 23, 2001

This patent is titled “Method for controlled optimization of enterprise planning models” and teaches:

*A computer-implemented method and system for controlled optimization of enterprise planning models is provided. This is accomplished by first defining an auxiliary objective function, which depends on the same variables as the model, or a subset thereof. An effective objective function is then constructed from the primary objective function by subtracting the auxiliary objective function multiplied by a weighting factor. The effective objective function is then optimized for a whole range of weighting values, yielding a table that describes how the primary objective function varies according to different values of the weighting factor. Optimization of the effective objective function with a given value of the weighting factor results in a particular value for the auxiliary objective. Thus, this computed table essentially provides a relationship between different realized values of the primary objective, the auxiliary objective, and all the variables of the enterprise planning model. The user is further provided with a way to specify a target value for the auxiliary objective to attain, and then use the table obtained previously to interpolate the value for the weighting factor that corresponds to the target value. This interpolated value for the weighting factor is then inserted into the effective objective function. This effective objective function is optimized, yielding the set of decisions which optimize the*

*primary objective function while at the same time satisfying the constraint that auxiliary objective achieve a target value.*

The reference fails to disclose, teach, or detail a specific method for determining the demand for a product at various prices. Regarding each independent claim, the reference does not make mention, or draw any relationship to "the number of competitors," or make any mention of the probability a customer will purchase the product at a given price. Furthermore, the reference does not discuss a "price-frequency mathematical distribution" of prices (as independently claimed) from competitors the supplier is likely to observe and its influence on determining the demand for the product at a given price.

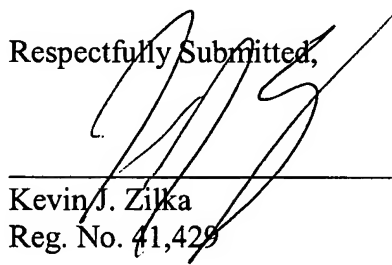
## **6. Conclusion**

Applicant believes that this Petition to Make Special has met all requirements set forth by 37 C.F.R. 1.102 and MPEP § 708.02(VIII), and respectfully requests that this Petition to Make Special be granted.

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Respectfully Submitted,



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Kevin J. Zilka  
Reg. No. 41,429



<b>Form 1449 (Modified)</b>  <b>Information Disclosure Statement By Applicant</b>  (Use Several Sheets if Necessary)	Atty. Docket No. ABE1P001 Applicant: Abe Filing Date: 8/19/2003	Application No.: 10/644,949  Group Art Unit: 3629
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#### U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A	5,615,109	3/25/1997	Eder	395	208	5/24/1995
	B	5,459,656	10/17/1995	Fields et al.	364	401	2/26/1993
	C	6,553,352	4/22/2003	Delurgio et al.	705	400	5/4/2001
	D	6,094,641	7/25/2000	Ouimet et al.	705	10	5/21/1998
	E	6,078,893	6/20/2000	Ouimet et al.	705	10	5/21/1998
	F	5,377,095	12/27/1994	Maeda et al.	364	401	7/7/1992
	G	5,822,736	10/13/1998	Hartman et al.	705	1	2/28/1995
	H	5,878,400	3/2/1999	Carter, III	705	20	6/17/1996
	I	5,918,209	6/29/1999	Campbell et al.	705	5	1/11/1996
	J	5,987,425	11/16/1999	Hartman et al.	705	20	10/10/1997
	K	6,029,139	2/22/2000	Cunningham et al.	705	10	1/28/1998
	L	6,308,162	10/23/2001	Ouimet et al.	705	7	5/21/1998

#### Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	M							
	M							
	O							
	P							
	Q							

#### Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	R	
	S	
Examiner		Date Considered

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.